Technical Memorandum

URS

To: Paul Huebschman, USACE – Portland District

From: Madi Novak

cc: Jeff Wallace, Chris Moody, URS

Date: September 30, 2002

Subject: Goose Island Construction History Research

Following is a summary of my research, findings and recommendations resulting from my visit to the USACE-Portland District office on September 10, 2002 with the objective of reviewing information on the construction history of Goose Island.

Teresa Morales of the USACE relayed the research she conducted on Goose Island construction as summarized in her August 23, 2002 letter. Ms. Morales conducted the following research:

- Reviewed aerial photographs from September 1984 (pre-Goose Island) and May 1988 (post-Goose Island) (attached). No other aerial photographs between those dates were available.
- Reviewed the Bonneville Master Plan which indicates that Goose Island was constructed from material derived from the navigation lock construction and soils on Goose Island were imported from Bradford Island.
- Interviewed USACE personnel who had involvement in the construction of the Navigation Lock.
- Attempted to identify USACE engineering plans or maps describing the construction of Goose Island. No such information was identified.

From these resources Ms. Morales concluded that Goose Island was constructed from excavated material from the navigation lock area and Bradford Island.

URS' supplemental research involved the following:

- Review of USACE's 1987 plans relating to the planned excavation of a southern portion of Bradford Island.
- Review of USACE's 1987 plans relating to navigation lock construction picturing Goose Island in existence.
- Discussion with Larry Greep of the USACE who worked on the navigation lock construction. He remembers excavation work for the navigation lock construction occurring sometime between 1988 and 1990 (after the construction of Goose Island as evidenced by the 1988 aerial photograph). He remembers spoils being transported upstream to Goose Island and also to Cascade Locks and perhaps Wyeth for disposal. Mr. Greep suggested several USACE staff to contact regarding the construction of Goose Island. Following is a list of individuals he suggested and their responses:

    - Mike Tyrel – Did not have knowledge of Goose Island construction history
    - Scott Apple – Did not have knowledge of Goose Island construction history

- Wilbur Mayer – Suggested I call the USACE Portland District Public Relations Office.
- Jeff Dorsey – Did not observe the construction of Goose Island directly, but he believes the material disposed of at Goose Island came from the low lying/wetland area on the south side of Bradford Island called Bradford Flat.
- Jim Runkles – Did not make contact.

- Reviewed a 1988 report prepared by the Public Port Districts of the Columbia River Gorge National Scenic Area titled *Designated Site Disposal Objective, Bonneville Dam/ Navigational Lock Project*. The document indicates that sediment from the Navigation Lock Project may be disposed of at the following ports: Cascade Locks, Skamania, Hood River, Klickitat, and The Dalles.
- Identified existence of a design memorandum titled *Bonneville Navigation Lock DM3, Geology, Excavation, and Foundation* (1984) and supplements 1 (1988) and 2 (1989). These memoranda may have information pertinent to the planned disposal site of excavated material, however, due to the heightened security status URS was not permitted to review this information.

The following preliminary conclusion may be drawn from the available information. Goose Island was constructed between 1984 and 1988. Construction material may have come from the southern area of Bradford Island early in the construction period of the navigation lock. It is possible that additional materials from other areas may have been added to Goose Island since that time period using spoils from nearby locations.

In addition to information regarding construction history of Goose Island, USACE provided URS with hydraulic modeling conducted in the Bonneville forebay area (encompassing Bradford Island and Goose Island). The modeling results indicate that sediments originating in the vicinity of Bradford Island may be transported to the vicinity of Goose Island.

Definitive information on the origins of Goose Island has not been identified. Permits are reportedly not required for USACE projects, and no plans or as-built drawings have been identified for the construction of Goose Island.

Additional research that may be conducted:

- Review of the *Bonneville Navigation Lock DM3, Geology, Excavation, and Foundation* design memoranda.
- Review of Bonneville Project construction plans located at the Bonneville Project office.
- Interview additional USACE personnel.

Recommendation:

Additional research may further clarify some issues relating to the construction history of Goose Island. However, the information currently available is adequate to meet the objective of this construction review which is to answer the following question:

Is Goose Island a suitable sediment background/reference location for environmental studies associated with the Bradford Island Landfill?

Given the available information on the construction history and the hydraulic modeling, the Goose Island vicinity may have been impacted by downstream sediments, and is therefore not suitable as a background/reference location.

Attachment – Letter from Theresa Morales to Jeff Wallace

DEPARTMENT OF THE ARMY
PORTLAND DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2946
PORTLAND, OREGON 97208-2946

REPLY TO
ATTENTION OF:

August 23, 2002

Jeff Wallace
c/o URS
111 S.W. Columbia, Suite #900
Portland, OR 97201-4014

Dear Mr. Jeff Wallace:

I am writing you on behalf of Paul Huebschman from the U.S. Army Corps of Engineers regarding background level testing for PCBs in the vicinity of Goose Island.

I have attached two aerial photographs and a portion of the Bonneville Master Plan, which deal with the construction of Goose Island. Goose Island was constructed from excavated material from the Navigation Lock and Bradford Island, which are considered contaminated with PCBs. As noted in the Bonneville Master Plan, Goose Island was built to compensate for the loss of brood rearing habitat and wetlands on Bradford Island.

The 1984 aerial photograph indicates conditions prior to the construction of the island. In addition, the 1984 aerial photograph shows six dolphin pilings just off shore from where Goose Island would be constructed. In the 1988 aerial photograph, after the construction of Goose Island, these dolphin pilings appear not to have been disturbed. This indicates that the area upstream of Goose Island might not have been contaminated by excavated material. Therefore, it appears that testing for background levels of PCBs upstream of Goose Island would be suitable.

If you have any questions or comments or require additional information, please feel free to contact me at (503) 335-1483.

Sincerely,

Teresa D. Morales, E.I.T


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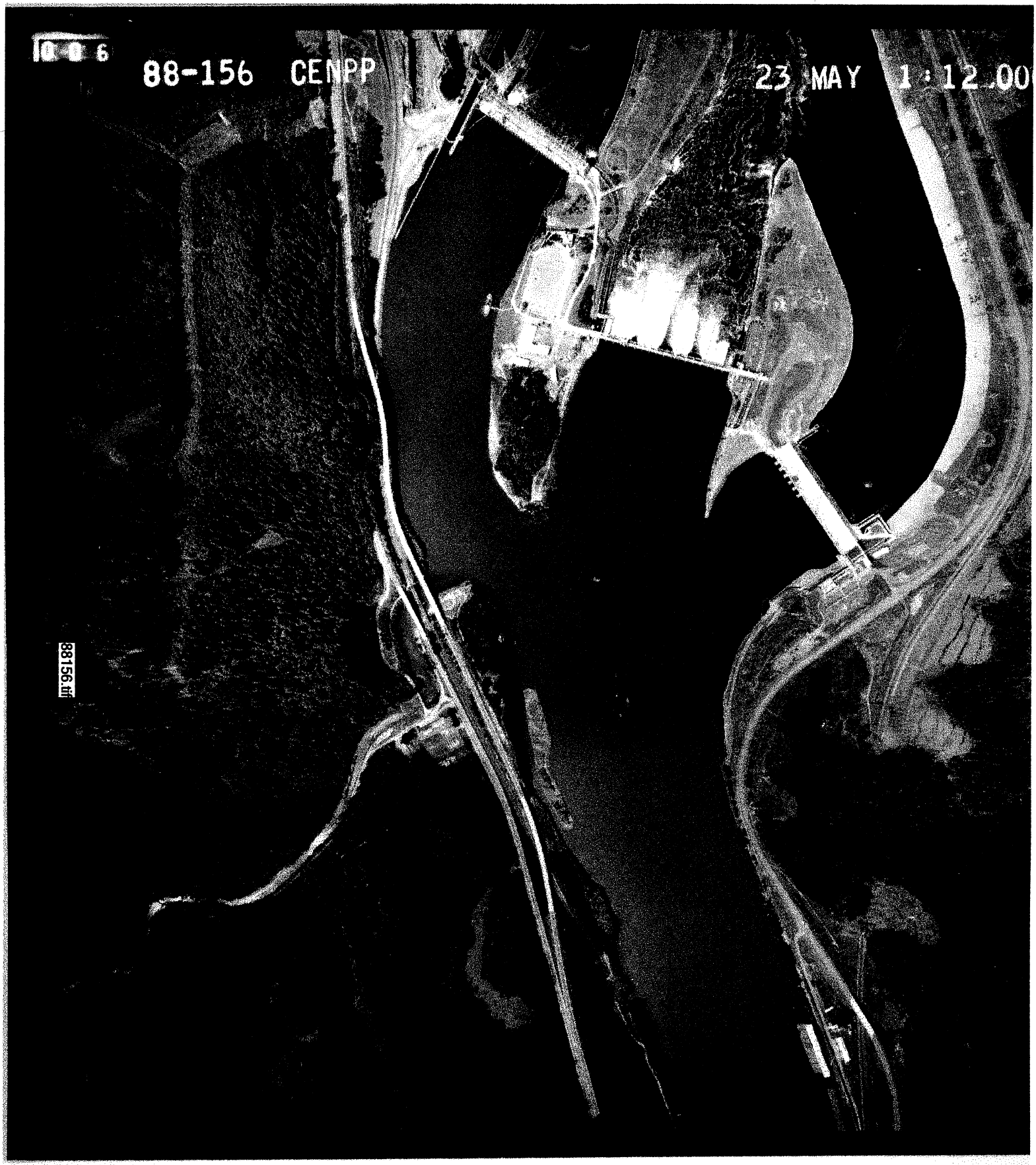
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GOOSE ISLAND

Unit Description

This unit is about one mile east of Bonneville Lock and Dam adjacent to the Oregon border. Cascade Fish Hatchery and Overlook Park are west of Goose Island on the south shore.

Boat entry is the primary means of access to the island. During low river levels, the island becomes a peninsula accessible by foot.

Goose Island was constructed from material derived from the Navigation Lock construction. The island was constructed with high banks and rip-rapped banks to protect the northern shoreline and accommodate periodic fluctuations. These sites were designed to facilitate formation of emergent habitat.

Soils on Goose Island were imported from Bradford Island and have not been assigned a capability subclass. The island supports upland, scrub-shrub wetland, and emergent wetland habitats and although the island occurs in the grand fir-Douglas fir zone, vegetation for the most part has been planted. Upland soils are generally rocky and are overlain by a thin layer of sand. Uplands support Scotch broom, clover, rye grass, and wild rose. Wetland cover includes willow, cottonwood, and alder with an understory of reed canarygrass, cattail, common rush, smartweed, soft stem bulrush, white clover, and bird's foot trefoil.

There is no developed infrastructure on Goose Island. The island itself was constructed specifically to compensate for loss of brood rearing habitats and wetlands resulting from construction the Navigation Lock. Recreation is not promoted at this site.

There are no cultural resources on this unit.

Acres	Land Classification	Managing Entity
3 total (1.1- upland habitat) (1.2- 1.7 - wetlands)	Multiple Resource Management: Wildlife Management - General	Corps of Engineers

Management Objectives

- Improve habitat to support foraging, roosting and loafing habitat for resident Canada geese in support of mitigation requirements.
- Develop habitat enhancement measures including vegetation plantings appropriate to local soil conditions.

Management Influences

Human intrusions and predator access during periods of low flow reduces habitat suitability for Canada geese.

Wave action can result in soil erosion on the north and west side of the island reducing habitat potential for Canada geese.

Vegetative supports forage and cover for song birds and aquatic mammals, but has limited suitability for Canada geese habitat.

Nuisance and invasive plant species (Tansy ragwort) occur on the island and are aggressive competitors with native vegetation.

Patrol of the island often requires the use of the ranger boat, which is not always available on the upstream side of the dam.

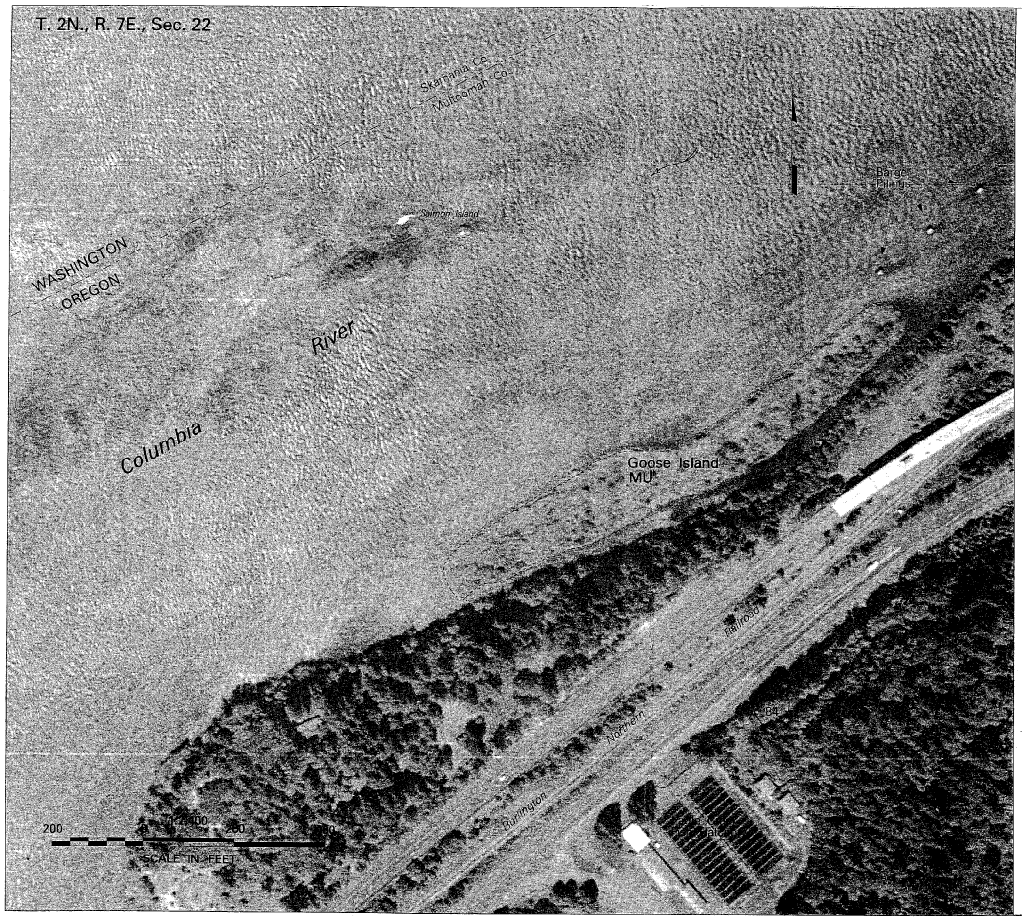
Soils found in this area may not be suited to desired uses. Any project which would disturb the soil should be evaluated based on soil type and the matrixes in the appropriate County Soil Survey.

Management and Development Concepts

Complete a plant survey of the island, identify prolific species and treatments conducive to establishing vegetation for Canada geese.

Assess influence of wave action on shoreline erosion and explore alternatives to reducing erosion on primary areas of impact.

Consult with the Oregon Department of Agriculture to develop appropriate treatments for controlling nuisance and invasive vegetation species.



Bonneville Lock and Dam — Washington/Oregon

BONNEVILLE MASTER PLAN

U.S. Army Engineer District
Corps of Engineers — Portland, Oregon

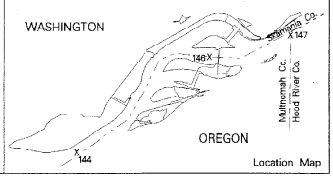
Goose Island Management Unit (MU)

LAND USE CLASSIFICATION:
Multiple Resource Management
Wildlife Management (3 Acres)

---------- Management Unit Boundary

Project Boundary: The shoreline approximates the project boundary at elevation 75 feet mean sea level (MSL), as described as the normal operating pool.

PRODUCED BY GIS,SURVEY, AND MAPPING SECTION, GEOTECHNICAL ENGINEERING BRANCH



Location Map